HEALTH SERVICES IN THE ALL VOLUNTEER ARMED FORCE

Mordechai Lando

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Arlington, Virginia 22209

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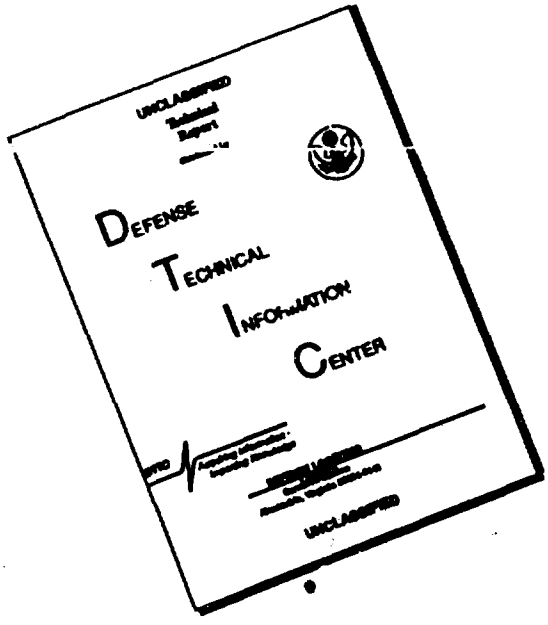

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HEALTH SERVICES IN THE ALL VOLUNTEER ARMED FORCE

—— *Mordechai Lando*

Purpose [1]

One major aspect of a draft is the ability to procure manpower at less than the market price. Nowhere is this as dramatic as in the case of the military medical services. The present value of a 26 year income stream for doctors who spent their entire career in the military is only 60 percent of the income stream for those in the civilian economy.[2] In a paper written for a 1964 DOD draft study, Professor John Dorsey, of the University of Maryland, calculated that military earnings must be 1.3 to 1.5 times civilian earnings to generate a sufficient flow of "true" volunteers (i.e., without draft pressure) for a 12,000 man medical corps. Applying these ratios to the income stream referred to above leads to the conclusion that the pay of doctors in the armed forces would have to be increased by 98 percent to 128 percent in the absence of a draft. Thus, if the only change made is from drafting doctors to paying them an amount sufficient to induce them to enlist, the budget for their salaries would approximately double.[3]

This study was undertaken in the hope of finding methods to keep down the increase. One obvious way to reduce costs is to reduce services, for example by cutting out free medical care for dependents and retired personnel. Such a decision, however, is a political one, and was treated as being outside the province of this study. This study assumes that the services now provided will continue in the volunteer context. Given this assumption the analysis attempts to find methods by which these services can be provided more efficiently, i.e., at lower cost to the taxpayer.

The primary recommendation of this study is: civilianize the provision of the armed forces health service to the fullest extent possible. This will reduce costs since higher earnings are required in the military vis à vis the civilian sector to overcome the non-pecuniary discrimination, indicated by Dorsey's research and by numerous DOD studies.[4]

In the volunteer Army the gap between pay of medical officers and pay of line officers will increase drastically. This may lead to a situation where a Captain in the medical corps will be earning more than the General commanding the post he is stationed on. Given the small and close knit community of most military posts this can have debilitating effects on morale. Civilianizing the medical services will eliminate this sore point as well as save money.

It is, however, not feasible to civilianize all medical billets. Sea duty billets and other short tour duty stations are obvious examples of positions best filled by military medical men. To fill these positions an expansion of the current military program of subsidizing medical education is proposed. Students would contract to serve some specified period in return for the subsidy to their education.

THE MILITARY MEDICAL SERVICES AT PRESENT [5,6]

Resources

The Department of Defense has budgeted an estimated 2 billion dollars in FY70 to provide health services to a population of approximately 10 million active duty personnel, retired personnel and dependents. Tables IV.3.1 and IV.3.2 contain the relevant data on facilities, manpower, expenditures and the eligible population.

Preliminary cost work done at CNA indicates that the budgetary expenditures for medical care are not $2b, but rather approximately $3.25b. The difference is mainly a result of the way the armed forces budgeting system operates. Health service expenditures are frequently charged, for valid reasons, to programs other than Program VIII. Other differences arise as a result of differing costing methodologies, particularly in regard to fringe benefits and pension.

It must, however, be borne in mind that even the $3.25b figure represents expenditures rather than the true factor costs. As a result of the draft the price of manpower to the Armed Forces is much below the true factor cost. Using the true factor costs involved in providing health services would probably raise the figure to approximately $4b.

TABLE IV.3.1. Department of Defense Medical Services

FACILITIES:	
Hospitals	242
Dispensaries, Large Reporting Plus Laboratories, Dental Clinics and Other Activities	Over 450
MANPOWER:	
Medical Corps	15,972
Dental Corps	6,717
Nurse Corps	11,321
Medical Service Corps	9,397
Biomedical Science Corps	1,043
Army Medical Specialist	613
Veterinary Corps	1,040
Enlisted	109,027
Civil Service[1]	47,665
Total	202,795
EXPENDITURES (FY '70 EST.):	(IN MILLIONS)
Health Research	104.3
Training and Education	132.3
Construction	63.0
Direct Hospital & Medical Services	1,476.8
Indirect Hospital & Medical Services	209.8
Prevention - Control of Health Problems	21.5
Total	2,007.7

[1]Includes U.S. and Foreign Hires, direct and indirect for Army. Manpower as of 31 Dec. 68
Source: ODASD (HA)

In addition to expenditures by DOD, the recipient population also has out of pocket costs for health services. These are for dental services and the co-insurance provisions of the Civilian Health and Medical Programs of the Uniformed Services (CHAMPUS).[7] In CY1968 private per capita expenditures on dental care in the U.S. was $16.53.[8] If we assume that approximately half the recipient population receive dental care outside DOD facilities then we can estimate a per capita cost of $8.27 and a total cost of $82.7 million. Another estimate is the figure of $220-240 million calculated by ODASD (HA) for the annual cost of a civilian dental care program similar to the CHAMPUS medical care program.

TABLE IV.3.2. Population Eligible for Care in Armed Services Medical Facilities 31 December 1968

3.4 Million	Active Duty Personnel
4.1 Million	Dependents of Active Duty Personnel
2.5 Million	Retired, Dependents of Retired and Dependents of Deceased Members
.025 to .035 Million	Civilians Overseas and their Dependents
10.025 to 10.035 Million	Total

No usable data is available on the costs of the co-insurance feature of the CHAMPUS program, but preliminary estimates indicate that this was about $26m or $2.60 per capita in FY1969. Adding our estimate of $3.25b for DOD expenditures to the estimate for dental care and co-insurance costs yields estimated per capita annual expenditures of $335-350 which is greater than the figure of $294 per capita for the total U.S. population in FY1969.[9] The gap increases if we use the estimate for true factor costs in place of the budgetary expenditures.

The data on per capita expenditures is impossible to interpret until more is known about the relative quality of medical care in the armed forces and the civilian sector. In addition, military costs are inflated by the war in Vietnam.

Data on health personnel manpower for each of the services is presented in Table IV.3.3. The 34,000 physicians, dentists and nurses represent about 22 percent of the total military health personnel and about 17 percent of the total manpower devoted by DOD to health services.

Table IV.3.4 contrasts the authorized number of physicians by specialty to those on active duty. It illustrates one of the major inefficiencies of the current medical manpower draft; at present doctors are pressured into the armed forces regardless of the need for their particular specialty.[10] Thus there are 34 percent more pediatricians, 31 percent more OBG men and 64 percent more specialists in internal medicine than authorized. In the Navy 5 percent of the physicians on sea duty were pediatricians or OBG men, specialists that we hope aren't called for aboard ship. This misallocation of professional resources is a major source of physician discontent with the armed services; many doctors resent being forced

TABLE IV.3.3. Department of Defense Health Personnel
Manpower Quarter Ending 31 Dec 1968

	DEPARTMENT OF DEFENSE		DEPARTMENT OF ARMY		DEPARTMENT OF NAVY		DEPARTMENT OF AIR FORCE	
CORPS:	AUTHORIZED	ABOARD	AUTHORIZED	ABOARD	AUTHORIZED	ABOARD	AUTHORIZED	ABOARD
MC	15,674	15,972	7,109	6,753	4,406	4,809	4,159	4,410
DC	6,607	6,717	2,842	2,871	1,957	1,928	1,808	1,918
NC	11,818	11,321	5,050	4,676	2,688	2,435	4,080	4,210
VC	997	1,040	626	635			371	405
MSC	8,734	9,397	5,847	6,075	1,594	1,697	1,293	1,625
BSC	976	1,043					976	1,043
AMS	589	613	589	613				
Officers Total	45,395	46,103	22,063	21,623	10,645	10,869	12,687	13,611
Enlisted Total	117,845	109,027	54,270	47,542	35,661	35,300	27,914	26,185
Total Military	163,240	155,130	76,333	69,165	46,306	46,169	40,601	39,796
Civil Service		47,665		28,745		10,021		8,909

TABLE IV.3.4. Department of Defense Number of Medical Corps Officers Authorized, on Active Duty by Specialty As of 31 December 1968

	DEPARTMENT OF DEFENSE	
	TOTAL	
	AUTHORIZED	ON ACTIVE DUTY
Total	15,674	15,972
1. Aerospace Medicine	1,683	923
2. Allergy	37	17
3. Anesthesiology	367	386
4. Cardio-Vascular Diseases	75	76
5. Colon and Rectal Surgery	-	1
6. Dermatology	164	200
7. Gastro-Enterology	42	47
8. General Practice	-	238
9. General Surgery	1,233	1,521
10. Internal Medicine	1,216	1,993
11. Neurology	93	145
12. Neuro-Psychiatry	10	-
13. Neurological Surgery	91	127
14. Obstetrics and Gynecology	697	913
15. Occupational Medicine	40	28
16. Ophthalmology	258	290
17. Orthopedic Surgery	585	607
18. Otolaryngology	235	284
19. Pathology	401	483
20. Pediatrics	647	865
21. Plastic Surgery	42	51
22. Physical Medicine	17	30
23. Preventive Medicine	171	221
24. Psychiatry	693	693
25. Pulmonary Diseases	50	36
26. Radiology	474	504
27. Thoracic Surgery	97	107
28. Urologic Surgery	192	268
29. Special Weapons Defense	35	26
30. Submarine Medicine	140	151
31. Tropical Medicine	3	4
32. General Medical Officer	3,565	3,583
33. Interns	497	149
34. Osteopaths	-	149
35. Transients, Patients, Etc.	1,046	-
36. Flight Medical Officer	-	551
37. Other	777	16

to work outside their specialty. A policy allowing all doctors to work in the field they choose would undoubtedly increase satisfaction and retention.

There are 470 physicians and 198 dentists per 100,000 active duty personnel. For the entire population served by the Defense Department the physician rate is 160 per 100,000.[11] For the entire U.S. population there were 151 active doctors per 100,000 persons in CY1967.[12]

There were 67 dentists per 100,000 members of the Defense Department population. Since at least a third of the population is ineligible for dental care, and others, particularly retired personnel, do not avail themselves of the services, the true ratio is probably over 100 dentists per 100,000. Both these ratios are significantly above the national figure of 56 per 100,000.[13]

Military medical specialists attribute the high ratio of dentists to the low standard of dental care received by recruits before they entered the services. Before World War II there were stringent dental standards for entry into the Armed Forces. However, during the early months of conscription during World War II, the rejection rate was so great that standards had to be drastically lowered; i.e., between November 1940 and September 1941, 250,000 of 1,600,000 Selective Service registrants examined were rejected for dental conditions. The dental standards have never been raised and now, except for gross abnormalities and diseases, there are practically no dental standards.

The lowering of dental standards had a profound effect on the characteristics of Naval dentistry. When the pre-World War II standards were in effect, the problem was chiefly one of maintenance. Since the standards have been lowered, the Naval Dental Corps has been confronted with the equally vital problem of providing dental care for hundreds of thousands of recruits who need extensive initial and maintenance treatment as well as comprehensive care for career personnel. The latest survey available reveals that incoming Navy or Marine Corps recruits average eight cavities per man. Many of these recruits require specialty treatment in periodontics, endodontics, prosthodontics, and oral surgery.

Utilization

In FY 1969 military medical facilities had 57,477 beds, admitted 1.3 million persons, had 53.4 million outpatient visits and delivered 146,000 children. The bed occupancy rate was 76 percent as compared to 80.0 percent for voluntary, nonprofit short term general and other special hospitals.[14] The military occupancy rate has remained relatively constant during

the 1960's despite the increasing number of casualties due to the Vietnam War. The number of operating beds was increased at approximately the same rate as the average number of occupied beds.

Table IV.3.5 shows the differences in bed occupancy rates between the services. The bed occupancy rates for the Army are significantly lower than the rates for the other services, though the Army rates have risen with the increasing involvement in Vietnam. These differences may be due to institutional differences between the services (i.e. size of hospital unit), but no information on this is available at present.

In recent years, as can be seen from Table IV.3.6, active duty military personnel are receiving an increasing share of the military medical services performed. There are several explanations for this phenomenon. One is the additional 900,000 men in uniform. Thus, active duty personnel represent a greater proportion of the recipient population, especially since most of the added uniformed personnel were below 23 years of age and hence had fewer dependents.[15] Another reason is the rise in morbidity rates as the involvement in Vietnam increased. In the Army, admissions to hospitals and quarters per 1,000 average strength increased by 58 percent between CY1963 and CY1968.[16]

In addition to these factors, improvements in the CHAMPUS program may be inducing dependents and retired personnel to seek medical care in the civilian sector. The available data to not permit separating out the supply (less residual space after caring for active duty personnel) and demand (improved CHAMPUS) effects on dependents and retired personnel.

The CHAMPUS Program

In CONUS, dependents and retired personnel can obtain health care in civilian facilities under a co-insurance program. Table IV.3.7 gives a summary of the benefits and costs of the program.[17] Dependents of active duty personnel, residing with their sponsors, need a statement of nonavailability of uniformed services hospitals before applying for civilian hospitalization. For all others covered by the program the statement is not required.

In FY1969 total costs of the CHAMPUS Program were $163 million. In addition very crude calculations indicate that the beneficiaries paid approximately $26 million as their share of the co-insurance. In FY1968 a daily average of 5,692 civilian hospital beds were occupied by CHAMPUS beneficiaries.[18] This compares to a daily average of 42,145 beds occupied in DOD

TABLE IV.3.5. Bed Occupancy Rates Fiscal Years 1965-1969

	1965	1966	1967	1968	1969
Department of Defense	73.1%	74.0%	75.1%	74.9%	75.0%
Department of the Army	64.7	65.8	68.2	70.6	74.5
Department of the Navy	80.8	82.7	82.5	78.7	76.4
Department of the Air Force	78.3	78.7	80.8	79.4	78.4

TABLE IV.3.6 Relative Use of Military Medical Facilities by Type of Clientele, Fiscal Year 1965-1969, DOD Worldwide[1]

	1965	1966	1967	1968	1969
A. Occupied Beds					
1. Active Duty Military	58.4	63.8	67.4	71.0	72.7
2. Retired Uniformed Personnel	6.4	5.8	5.3	5.0	5.0
3. Dependents of Uniformed Personnel	29.6	25.6	22.6	20.3	18.9
B. Outpatient Visits					
1. Active Duty Military	48.5	50.1	52.1	52.5	52.2
2. Retired Uniformed Personnel	2.7	2.9	3.0	3.1	3.4
3. Dependents of Uniformed Personnel	48.8	47.1	44.9	44.4	44.4
C. Admissions					
1. Active Duty Military	45.4	50.6	52.8	55.5	55.7
2. Retired Uniformed Personnel	4.3	4.3	4.3	4.3	4.7
3. Dependents of Uniformed Personnel	50.3	45.1	42.9	40.2	39.6

[1] Not totaled to 100% due to presence of other beneficiaries. Data DASD; (HA)

TABLE IV.3.7.

TYPE OF EXPENSE	CHAMPUS	CHAMPUS
	DEPENDENTS OF ACTIVE DUTY PERSONNEL	RETIRED & DEPENDENTS OF RETIRED PERSONNEL
HOSPITAL		
Room and board (semiprivate room)	Provides semiprivate hospital accommodations and all necessary services and supplies furnished by the hospital. Patient pays first $25 or $1.75 per day whichever is greater	Pays 75% for semiprivate hospital accommodations and all necessary services and supplies furnished by the hospital.
Other inpatient charge		
Emergency care	$50 deductible ($100 maximum per family) pays 80% of remainder each fiscal year.	$50 deductible ($100 max per family) pays 75% of remainder per fiscal year.
DOCTOR'S SERVICES		
Surgery and in-hospital visits	Provides full payment for fees of professional personnel.	Pays 75% for fees of professional personnel.
Out-of-hospital visits (including diagnostic tests and physical therapy)	$50 deductible ($100 max per family) pays 80% of remainder each fiscal year.	$50 deductible ($100 max per family) pays 75% of remainder per fiscal year.
MENTAL AND NERVOUS CONDITIONS		
In-hospital	Same as illness	Same as illness
Out-of-hospital	"	"
MATERNITY		
Hospital	Same as illness	Same as illness
Doctor	"	"
Complications	"	"

TABLE IV.3.7. (Continued)

TYPE OF EXPENSE	CHAMPUS DEPENDENTS OF ACTIVE DUTY PERSONNEL	CHAMPUS RETIRED & DEPENDENTS OF RETIRED PERSONNEL
DRUGS (out-of-hospital)	$50 deductible ($100 max per family) pays 80% of remainder	$50 deductible ($100 max per family) pays 75% of remainder
Private duty nursing	Hospitalization, if necessary same as illness and repair of accidental injury	Hospitalization, if necessary same as illness and repair of accidental injury
DENTAL CARE		
EXTENDED CARE (nursing homes and home services)	Domiciliary or custodial care not provided. Doctor and drugs 80% after $50 deductible	Domiciliary or custodial care not provided. Doctor and drugs 75% after $50 deductible
PREVENTIVE CARE (routine physical and eye exams, immunizations, etc.)	No coverage	No coverage
OTHER (appliances, braces, rental of medical equipment, etc.)	Not covered	Not covered
LIFETIME MAXIMUM	Not specified	Not specified
ANNUAL PREMIUM Total Government contribution Employee pays	None	None

facilities. If the CHAMPUS beneficiaries had used DOD facilities this would have led to an increase of 13.5 percent in the number of beds occupied.

Table IV.3.8 compares military and civilian hospital bed usage for dependents and retired personnel. Both groups bear some of the cost of civilian hospitalization. Dependents of active duty personnel pay less than retired personnel, but are not always eligible for CHAMPUS. It is surprising to find that both groups of dependents have the same proportionate breakdown as between civilian and military hospital beds despite differing relative costs. Retired personnel still prefer military hospitals, probably because of the lower cost borne by them.

Table IV.3.9 compares the average length of stay in civilian and military hospitals in the U.S. for Army dependents and retired personnel.[19] In both cases dependents of active duty personnel have much shorter duration, probably because many of the cases are maternity cases. Retired personnel and their dependents stay longer in military than in civilian hospitals; as would be expected due to the higher civilian hospital costs.

Combining CHAMPUS and DOD hospital day data for FY1968 gives an annual rate of 904 hospital days per 1,000 non active duty population. This compares quite closely to the rate of 896 per 1,000 under the Federal Employees Health Benefits Program.[20]

Cost per hospital day under CHAMPUS in FY1969 varied with type of beneficiary. Table IV.3.10 shows that costs per day are highest for dependents of active duty personnel. All these figures are low compared to the $61.38 daily expense for all non-federal short term and other special hospitals.[21]

MORBIDITY IN THE ARMED FORCES [22]

The preceding text discusses at some length the inputs to the production of health services in the armed forces. In this section an attempt will be made to get some indicators of the output of health services. Various indexes of health status will be used and these indexes will be compared to similar data for the civilian sector. Unfortunately, the data collected are often not directly comparable.

Table IV.3.11 shows that there are significant differences between the Air Force and Army morbidity rates. Unfortunately, comparable data is unavailable for the Navy except in the case of hospitalization ratios. Admissions to hospitals and quarters - i.e., being excused from duty for medical reasons - is more common in the Army. The Army admissions ratio was about 50 percent above that for the Air Force in the

TABLE IV.3.8. Hospital Beds Occupied by Non-Active Duty Personnel FY 1968

	DOD BEDS	% of TOTAL	CIVILIAN HOSPITAL	% of TOTAL	TOTAL
Dependents of Active Duty Personnel	6,555	61.4%	4,116	38.6%	10,671
Dependents of Retired and Deceased	1,984	62.3%	1,203	37.7%	3,187
Retired Uniformed Personnel	2,126	85.1%	373	14.9%	2,499
Total	10,665		5,692		16,357

TABLE IV.3.9. Average Length of Stay Army Hospitals CONUS and Civilian Hospitals Under CHAMPUS Calendar Year 1968

	ARMY HOSPITAL	CIVILIAN HOSPITAL
Dependents of Active Duty Personnel	5.7 days	6.0 days
Retired Personnel and Their Dependents	11.1 days	10 days

TABLE IV.3.10. Cost Per Hospital Patient/Day in CHAMPUS Program in FY 1969 by Type of Beneficiary

	GOVERNMENT PAYS	PATIENT PAYS	TOTAL COST
Dependent of Active Duty Personnel	55.26	4.10	59.26
Dependent of Retired and Deceased	35.88	11.96	47.84
Retired Personnel	39.90	13.30	53.20

TABLE IV.3.11. Selected Indexes of Morbidity in the Armed Forces 1959-1967[1]

	1959	1960	1961	1962	1963	1964	1965	1966	1967
A. ADMISSION RATES PER 1,000									
Army[2]	355	345	309	300	291	271	279	340	331
Air Force[3]	246	237	208	202	195	186	179	180	177
B. DAYS LOST PER ADMISSION									
Army[2]	12.2	12.5	13.3	13.4	12.8	12.7	12.7	12.7	13.1
Air Force[3]	13.7	13.7	13.6	13.5	13.5	13.7	14.3	14.6	14.9
C. NONEFFECTIVE RATIOS PER 1,000 AVERAGE STRENGTH									
Army[2]	11.9	11.8	11.3	11.0	10.2	9.4	9.7	11.8	11.9
Air Force[3]	9.3	8.9	7.7	7.5	7.2	7.0	7.0	7.2	7.2
D. HOSPITALIZATION RATIO PER 1,000 AVERAGE STRENGTH									
Army[2,4]	9.4	8.7	8.6	8.2	7.7	7.1	6.8	8.0	8.1
Air Force[3]	7.2	6.8	6.0	5.8	5.6	5.4	5.5	5.5	5.3
Navy and Marine Corps[5,6]	9.4				7.9	7.4	7.2	7.7	8.6

[1]All data refers to calendar year unless otherwise specified.

[2]Excludes battle injuries.

[3]Includes very small number of battle injuries.

[4]For fiscal year.

[5]Includes battle injuries.

[6]Navy data is for Calendar year until 1963 and Fiscal year thereafter.

Definitions: *Admission rate* is total number of spells of illness per 1,000 per year. The *admission rate* multiplied by the days lost gives total sick days per 1,000 per year. This product divided by 365 gives the *non-effective ratio* i.e. number of men per 1,000 ill on any given day. The *hospitalization ratio* is the number of men per 1,000 in the hospital on any given day.

Sources: Army data from *Annual Chart Book:* Army Medical Department, Department of the Army, Office of the Surgeon General, Office of the Comptroller, 1970. Air Force data from various *Annual Reports of the USAF Medical Service*, Office of the Surgeon General, United States Air Force. Navy data from *Medical Statistics - U.S. Navy* volumes 95-99 and *Statistics of Navy Medicine* volumes 20-25, Office of the Surgeon General, U.S. Navy.

1961-1963 period. Both services had a decreasing rate after 1959. The Air Force rate seems to have leveled off at approximately 180 per 1,000 during the past few years. The Army rate dropped by 24 percent between 1959 and 1964, but has been increasing since. The increase in the last two years was undoubtedly due to the war in Vietnam, either because of decreasing draft medical standards or an increasing proportion of men stationed in Southeast Asia with concomitantly high non-battle morbidity rates.

On the average it appears that episodes of illness were more frequent but less serious in the Army than the Air Force. Thus days lost per admission has consistently been higher in the Air Force. However, the discrepancy in admission rates is of greater relative importance than the decrease in days lost per admission. Hence, the non-effective rate for the Air Force is much smaller than it is in the Army. Non-effective rates for both services have dropped since 1959. The Air Force rate appears to have leveled off at approximately 7.0 - 7.2 per thousand, while the Army rate has been increasing since 1964 and in 1967 it equaled the 1959 rate.

The Air Force hospitalization rate is lower than the rate for the other services. The Navy-Marine Corps data includes battle injuries, but excludes Naval station hospitals and thus isn't comparable to the data for the other services.

Some *a priori* reasons can be given for the apparent better health of the Air Force. The Air Force applies much more stringent medical standards to its applicants and thus has a healthier population to begin with. The Air Force has a high proportion of officers.[23] This should reduce illness since a smaller proportion of Air Force personnel live in barracks where contagious diseases, particularly upper respiratory infections, spread rapidly. Uniformed personnel in the Air Force have a higher level of educational attainment than their Army counterparts, and recent studies indicate that education is positively correlated with health.[24] On the other hand, Air Force personnel are older which should lead to increasing disability. The causes listed above are meant to be suggestive rather than conclusive. This is an area which warrants further investigation.

Table IV.3.12 compares sick days in the military to sick days in the civilian sector. For the civilian sector two measures are used. The one which would appear to be closest to the military definition is work loss days, but this is an understatement since the military data refers to a seven day week rather than a five day week. Another measure of illness in the civilian sector is restricted activity days which may include days in which one may have worked, but was limited in his activity.

TABLE IV.3.12. Average Sick Days Per Person Per Year

	1963	1964	1965	1966	1967
Army[1,4]	3.7	3.5	3.7	4.9	5.4
Air Force[1,4]	2.6	2.6	2.6	2.6	2.6
Male Civilian[2]					
(a) work loss days	4.0	4.0	4.7	3.9	3.9 (4.2)[3]
(b) restricted activity days	9.0	9.8	9.0	10.0	9.8

[1]Army and Air Force data is for the calendar year.

[2]Civilian data is for the fiscal year. All civilian data is standardized to the age distribution in the armed forces for the year.

[3]Data in parenthesis is for calendar year 1967.

[4]Army and Air Force data include battle casualties.

Sources: Army data from Table prepared by the Medical Statistics Agency, Office of the Surgeon General, Department of the Army. Air Force data as in Table III. Civilian data from *Current Estimates from the Health Interview Survey*, Series 10 Number 10, 13, 20, 37, 43, and 52. National Center for Health Statistics, Department of Health, Education and Welfare.

It should be noted that, unlike the other tables, the Army data in Table IV.3.12 contains battle casualties. Initial calculations indicate that in the absence of battle casualties, but including non-battle data from Southeast Asia, the average sick days per person per year for the Army was 4.0 in 1966 and 3.2 in 1967.[25]

Irrespective of the civilian measure, morbidity in the armed forces is lower than in the civilian sector. Reasons for this include the more select population in the armed forces and the availability of free medical care in the military. Another factor leading to lower morbidity in the armed forces may be the requirement of an examination by a corpsman or doctor before one can be excused from duty.

Despite higher morbidity rates in the civilia sector, hospital utilization is much higher in the military sector. Table IV.3.13 shows that, relative to the civilian population, a higher proportion of military men enter the hospital, and once there, they stay for a longer period. Thus we face the paradox that the healthier population is also the one with greater consumption of hospital resources.

Economic discussions of the civilian health sector have advocated increasing efficiency by reducing hospital usage and substituting ambulatory care.[26] By these standards, the military medical system appears inefficient. However, it is argued that for a large proportion of the active duty personnel,

TABLE IV.3.13. Selected Indexes of Hospital Usage

	1963	1964	1965	1966	1967
A. HOSPITAL DAYS PER HOSPITAL ADMISSION[4]					
Army[1,2]	14.7	13.7	13.6	12.4	13.3
Air Force[3]	10.7	11.0	11.7	11.6	11.4
Civilian Males[1]	11.1	9.3	8.1	8.6	9.2
B. HOSPITAL ADMISSIONS PER 100 PERSONS PER YEAR[4]					
Army[1,2]	29.8	27.4	27.0	31.9	32.9
Civilian Males[1]	8.4	8.0	8.2	8.7	8.2

[1]Data refers to fiscal year.

[2]Army data includes battle casualties in Part A and excludes them in Part B.

[3]Air Force data refers to uniformed personnel in all services treated in Air Force medical facilities and may include some battle casualties.

[4]For civilians, data is hospital discharges. This probably leads to an understatement of the true civilian figures.

Sources: Same as previous tables.

hospital usage is warranted since they can't remain unattended in the barracks. In other words, for many illnesses, particularly upper respiratory infections, a civilian can remain at home tended by his family, but a soldier, whose only home is the barracks, must go to the hospital.

If this viewpoint is correct, then it is difficult to understand why hospital days per admission are so much higher in the armed forces. It would appear that the hospital stay for those illnesses which do not require hospitalization in the civilian sector, should be shorter, on the average, than the stay for other, more severe, illnesses. Thus the higher hospital utilization rate in the military still requires explanation.

In fiscal year 1969 cost per patient day in Army hospitals was only 57 percent of the costs in non-federal short term general hospitals. If, indeed, many Army patients require mainly hotel services and only a minimal amount of medical services this may explain the relatively low cost per patient day. This in turn seems to indicate that it might be advisable for the armed forces to invest in small infirmaries where moderately ill patients could receive the hotel care they need.

These infirmaries could rely on medical corpsmen to dispense whatever medication is required.

In summary, this section indicates that military personnel are in better health than their civilian compatriots. There is no way of determining to what extent this is due to starting out with a healthier population and to what extent it is due to the greater per capita expenditure discussed earlier. In addition, we noted that military medical care is much more hospital intensive than in the civilian economy. To re-emphasize this point: in the Air Force in 1967, 74 percent of all those excused from duty were hospitalized whereas in the civilian economy hospital days for males 17-64 were only 26 percent of their work loss days.

HEALTH SERVICES IN THE ALL-VOLUNTEER CONTEXT

PURPOSE

By forcing individuals to serve at compensation levels below those at which they would volunteer, the draft imposes a tax on draftees and reluctant volunteers. The average tax on physicians is higher than it is for any other occupational group. It is this tax which enables the Department of Defense to provide health services at less than their market cost. With the introduction of the all-volunteer concept, the tax implicit in the draft will disappear, and the budget required to provide the same level of health services will increase significantly. These increased budget outlays are not an increase in costs, but reflect a shift in tax burden from the reluctant volunteers and draftees to the general taxpayer.

This section discusses and evaluates some approaches to changing the system with the advent of voluntarism. The following section discusses in more detail the preferred strategy.

As explained before, the option of paying the price necessary to supply all existing services with physicians in uniform was rejected. This option, it is felt, would create too great a gap between the pay of line officers and the pay of medical officers.

Decreasing the Demand for Health Services

One obvious way to cut the costs of providing health services is simply to provide fewer services. No one would advocate decreasing services to active duty personnel, but many questions arise concerning providing care to retired personnel and their dependents. There is no legal obligation,

though there may be a moral obligation, to provide health care for this group.[27] Others are even willing to decrease services to dependents of active duty personnel.

However, as a practical matter it would be very difficult to cease providing services to these two groups. What has been done is to shift the locus of providing care from military medical facilities to civilian facilities via the CHAMPUS program. Is furnishing medical care via the CHAMPUS program more efficient, i.e., less costly, than furnishing it in military facilities? Previous studies indicate that it is not.[28] Even if the estimates for the cost of care in military facilities are raised by a factor of two, they are still below comparable civilian costs.

One factor the previous studies appear to have neglected is the effect of alternative systems on the supply and demand for medical care. These studies simply costed out what a given package of care would cost under alternative systems without considering how the systems in practice will affect the package. For example, the introduction of deductibles and coinsurance features in place of a free service will lead to a decrease in demand. Substituting a system such as prepaid health insurance would probably lead to substituting ambulatory care for hospital care and thereby reduce costs.

Thus to simply shift more of the care from military facilities to civilian facilities is probably not efficient. In addition it is unwise from the viewpoint of the morale and training of the military physicians. Physicians prefer a wide spectrum of age, sex, and health status among their patients. They feel they would become stale if all they had to deal with were young males 17-40.

The CHAMPUS program, and any extensive enlargement of it, suffers from the same type of problems that afflict Medicare and Medicaid.[29] As long as the private health sector retains its current inefficient mode of operation, health costs will continue to skyrocket.[30] Increasing demand for services in the private sector either via Medicare or CHAMPUS will only give additional impetus to already rising prices.

It would not be wise to shift demand from the military sector to the private sector when our two highest health officials have declared, "This Nation is faced with a breakdown in the delivery of health care. . . Expansion of private and public financing for health services has created a demand for services for increase of the capability of our health system to respond."[31]

The National Advisory Commission on Health Manpower, while applauding CHAMPUS as a step away from involuntary Selective Service mechanisms, stated: "At the same time, we are not wholly sanguine about placing military dependents and

retired personnel into the inadequate system of medical care to which most of this Report is directed. Government provision of such care, rather than simple financing of it, might prove no more expensive to the Government and, what is more important, it could provide an opportunity for experimentation with new and improved methods of care. For this reason, the armed services should look toward the greater recruitment of health manpower through voluntary procedures, particularly when that manpower is to be used in medical facilities located in the United States."[32]

Recently, prepaid medical group practices have been getting much publicity as a panacea for what ails the private health sector.[33] Secretary Finch of HEW has proposed an amendment to the Medicare and Medicaid law that would encourage the development of such prepaid services for the elderly and the poor.[34] If CHAMPUS were also revamped to encourage prepayment and preventive care it too would become more efficient. However, the military medical system at present is a prepaid (in this case free) group practice. It is difficult to see why practicing in civilian rather than military facilities would lead to greater efficiency.

Increasing the Efficiency of the Military Medical System

Another path to reduced costs is to operate on the supply side and increase output per unit of input. Without making a detailed study of all Defense Department medical facilities it is impossible to state where waste occurs at present and what steps should be taken to eliminate it. The discussion in this section will be on a much more abstract level.

One general method by which efficiency in the health sectors, both private and governmental, can be improved is by substituting para-medical personnel for medical personnel wherever feasible. The military has a large number of such para-medical personnel--the medical corpsmen--and the conventional wisdom is that the military is far ahead of the civilian sector in substituting lower cost, less educated allied health personnel for high cost, highly educated doctors.[35]

One factor easing the substitution of para-medical personnel in the armed forces is the absence of legal restrictions. Such legal restrictions and the threat of malpractice suits seem to discourage substitution in the civilian sector.[36]

This study was unable to fully analyze whether the corpsmen are being used to best advantage. The available evidence indicates that there are wide variations within the armed

services in the degree of substitution. Casual empiricism seems to indicate that on the battlefield and in remote duty stations substitution takes place to the fullest extent possible. Nonetheless, in bases and hospitals in the U.S. such substitution appears to be limited and leads to dissatisfaction on the part of the corpsman who finds himself relegated to a position of lower medical responsibility in CONUS than he had achieved on the battlefield.

There is some data to illustrate the greater degree of para-medical substitution on the battlefield. The Navy Medical Department recently had over 6,000 men in Vietnam including 400 doctors, 140 dentists, 5,000 corpsmen and 300 dental technicians.[37] Thus the ratio of para-medical personnel to doctors and dentists was 9.8-1. Table IV.3.3 indicates that at approximately the same time, the global ratio of Navy para-medical personnel to Navy doctors and dentists was 5.2-1. For all of DOD the ratio was only 4.8 para-medics per doctor or dentist. Inclusion of nurses as medical personnel and Medical Service Corps officers as para-medical personnel reduces the Navy ratio in Vietnam to 8.5 and globally to 4.0. In other words, battlefield conditions encourage twice as much substitution as non-battlefield conditions.

The differential rate of substitution can be readily understood from the economic viewpoint. On the battlefield it makes sense to limit your loss of expensive doctors. Both from DOD's financial viewpoint and the doctors' own sense of self-preservation, substitution is called for. Stateside, on the other hand, there is no incentive to the doctors in charge of providing health services to DOD to encourage more substitution. They are salaried and none of the gains in efficiency would accrue to them.[38] Thus a different set of incentives is necessary if increased substitution is desired. Such a set of incentives is discussed below.

Another strategy to increase efficiency is to reduce hospital utilization by substituting outpatient services for inpatient care. The data presented above indicate that hospital utilization in the military is quite high by civilian standards. Consequently this is an area where significant savings could be achieved.

Lack of proper economic incentives provides a ready explanation for the presence of this inefficiency. The patient does not bear the cost of hospitalization nor suffer any loss of income while hospitalized. It is true that there is no special economic incentive, as there is in the civilian sector, for military physicians to prefer inpatient to outpatient treatment. On the other hand there is no incentive to prefer outpatient treatment. In the absence of economic incentives, convenience and the desire to practice "Cadillac" medicine

may lead to increased hospital utilization. The proposals herein attempt to deal with this aspect of efficiency.

Civilianization

The preferred approach to meeting the challenge of an all-volunteer army is to civilianize the personnel of the medical corps to the greatest degree possible. As emphasized above, there is no reason for preferring the private sector over the military medical system. On the other hand the virtues of the military medical system lie in the fact that it is a system and does not depend on the uniform worn by the personnel manning the system.

What is envisaged is the Department of Defense retaining its current network of health facilities and contracting on a geographic basis with self-governing groups of doctors to man the facilities. Based on the pre-Vietnam situation, an estimated 12,000 doctors will be required in the all-volunteer armed forces. At least two thirds of these billets could be civilianized, with the remaining being staffed by a uniformed medical corps.

The preferred solution will be less expensive than an all-volunteer uniformed medical corps while retaining or improving the current quality of medical care. It should also prove less expensive than shifting the burden to the facilities available in the private sector. The reasons for this conclusion and the methods of implementing this solution are detailed below.

THE USE OF CIVILIAN MANPOWER IN THE DEPARTMENT OF DEFENSE HEALTH CARE SYSTEM

Advantages of Civilianization

REMOVAL OF NON-PECUNIARY DISINCENTIVES

Over the period 1956-1968, there were at least thirteen studies dealing with the problem of retaining medical officers in the armed forces.[39] These studies all mentioned the low salary paid as one factor deterring retention. In addition, they highlighted over a dozen non-monetary reasons for not choosing a military career. The salaries paid to volunteer uniformed physicians would have to be higher than their

civilian alternatives in order to overcome these disincentives and encourage doctors to choose a military career. The following is a partial list of these negative aspects of military life.

(a) instability due to rotation policies
(b) undesirable location or facilities
(c) assignments
(d) physician-patient relationship
(e) professional leadership
(f) housing
(g) personal freedom
(h) career
(i) promotions

Manning the health facilities with self-governing groups of civilian doctors would remove most of these disincentives. Thus the salaries paid these doctors would have only to equal rather than exceed what they could earn in other civilian alternatives. For example, the civilian doctor would choose the area of the country in which he proposed to work and would work there as long as he desired, provided that he met the professional standards set by his fellow doctors. Thus factors (a), (b) and (c) are removed in one fell stroke. Similarly, in the absence of frequent rotation of doctors, a more meaningful physician-patient relationship can develop, though this would still be hindered by the rotation of the patients.

ECONOMIES OF STABILITY

Military policy requires frequent rotation of duty posts. This may be necessary for the small cadre of officers who will proceed to the heights of the command structure. A necessary function of their training is personal knowledge and experience of as many parts of their service's mission as is possible. Large corporations, which resemble the military in bureaucratic structure, also follow a policy of frequent rotation of able young executives.

A major cost of this policy is decreased efficiency during the learning period as the newly rotated officer learns his new job. In many cases these costs will outweigh the benefits of rotation. This was demonstrated by the recent decision by the U.S. Naval Academy to hire a civilian athletic director. Navy's football coach, Rich Forzano, said "This is a great step in the right direction and gives the athletic department a much needed continuity." Gordon S. White, Jr., a N.Y. Times sports columnist, noted, "Primarily, the new move means a man who knows the job and one who knows those persons at other institutions with whom he must deal day in and day out. Every three years in the past a new captain has had to spend time learning the work and those with whom he had to work."

It would appear that the medical corps is another instance where the costs of rotation exceed their benefits. This is conspicuous in the case of surgical teams where frequent rotation nullifies the benefits of previous joint experience. It is also present, as noted above, in the question of physician-patient relationships. Lastly, in a hospital-based group practice, which military medicine is, there are additional benefits accruing to the group as a result of learning to work together. Civilianization, which enhances stability of assignment, will thereby be more efficient than a uniformed corps.

Of course a uniformed corps could reap these benefits if rotation were abolished. This, however, is an impossibility. Rotation in a uniformed corps is necessary to equate the probability of good and bad assignments. In a civilian corps this is done via the wage rather than non-market adjustments.

OTHER ADVANTAGES

Civilianization in military facilities is preferable to shifting more of the health care entirely to the civilian sector via CHAMPUS for several reasons. One reason is that, as has been pointed out previously, it is the opinion of a growing number of observers that prepaid hospital-based group practice is the most efficient form of health care available today. Professor Avedis Donehedian, in a recent review of several studies comparing prepaid group practice to alternative forms of medical care, concluded:

> "Least open to doubt are the capability of prepaid group practice to achieve a more rational pattern in the use of medical resources, its ability to control costs and the greater protection it generally offers against the unpredictable financial ravages of illness."[40]

Another consideration is that the use of civilian manpower might help eliminate duplications of facilities in areas where more than one service maintains health facilities. In addition, if particular military health facilities are underutilized, the eligible population might be expanded to include otherwise ineligible civilians. This concept of a civilian medical group practicing in Defense Department facilities might prove applicable to other federal government health programs such as the Public Health Service and the Veterans Administration. In some locations, particularly out west, there may be economies in having the same medical group provide services to all three populations.

There is one final advantage. If DOD health facilities were scaled down to service only the active duty personnel, then, in terms of rapid increases in casualties, a critical

shortage of beds might develop. Between FY1965 and FY1969 beds occupied by active duty personnel increased by 78 percent.[41] A system scaled down to the needs of only active duty personnel in peacetime might have had difficulty in meeting the rapid surge in demand. A similar point might be made, and will be discussed in the next section, covering reducing the number of doctors on active duty. However, it seems clear that transferring human resources from the civilian sector to the military sector can be accomplished more rapidly and with less inconvenience to the general public than transferring capital resources.

There are some other advantages that civilianization offers when it is compared to an all-uniformed corps. Given present military policy, a career in the medical corps is virtually impossible for a woman.[42] A civilian group with no problems of rotation, etc. could utilize female medical manpower to a much greater extent. This will probably also lower the costs of providing health services since the income earned by female doctors tends to be lower than that earned by males. In 1954 the median income of male doctors who worked 50-52 weeks was 225 percent that of their female counterparts.[43] Sixty-one percent of female doctors were on a wage or salary basis as compared to only 33 percent of male doctors.[44]

Another benefit is reduced turnover. Unpublished military estimates claim that three experienced physicians are equivalent in output to four newly minted doctors. Civilian groups find their turnover is quite low after the initial period.[45] Thus civilianization and its attendant high retention should reduce the total demand for physicians by at least 1,500 doctors. If the uniformed corps also achieves better retention than the current experience, then further retentions might be achieved.

Another advantage might be the easing of lateral entry. At present a doctor with several years of experience in the civilian sector finds himself at a disadvantage if he then decides to choose a military career. This hindrance to belated entry would not be present in civilian medical groups.

Disadvantages

The major disadvantage would be the lack of manpower to meet crises. This can be met by creating a reserve medical corps. Members of the civilian medical groups could be required to be members of this reserve. In place of compulsion, adequate compensation could be given to encourage voluntary enlistment in the reserve. In time of war a standby draft might be required.

Several studies have found reluctance on the part of consumers to join prepaid medical groups.[46] These studies all

dealt with persons who had previously been accustomed to traditional fee for service medical practice. Such reluctance would not occur with the DOD recipient population since their present system is also prepaid group practice.

Organization of the Civilian Medical Groups

The relationship of the Defense Department to the civilian medical groups would be similar to the relationship of the Kaiser Foundation Health Plan to the Kaiser Permanent Medical Groups. For an extensive discussion of the Kaiser setup see Appendix IV of the Report of the Health Manpower Commission. This section will be devoted primarily to discussing any unique characteristics of applying this system to the military.

It was pointed out above that military medical care is relatively hospital intensive. One of the major advantages of the Kaiser system has been its successful substitution of ambulatory care for inpatient care without allowing the quality of medical care to deteriorate. The type of incentives used by Kaiser to encourage doctors to use outpatient facilities will have to be adopted to use in the military context.

The Kaiser groups, with the possible exception of the multi-phasic testing experiment in Northern California, have not been very innovative in the substitution of para-medical for medical personnel. It was noted earlier that this was the result of the lack of proper incentives. In general, prepaid health plans pay their medical personnel a salary rather than a fee for each service.

It appears that one could and should differentiate between the relationship of the consumer to the plan and the relationship of the producer to the plan. It should be feasible to have a plan selling prepaid health care to its subscribers while paying its doctors on a fee-for-service basis. The fee-for-service scale could still retain incentives for outpatient as opposed to inpatient care. The plan as part of its responsibilities monitors the doctors in any event, and this should prevent the abuses of fee-for-services that occur in the private sector. These abuses are due in large part to the ignorance of the consumer who is unaware of what he is purchasing. Such ignorance is avoided by placing the plan between the consumer and the producer.

In the civilianization program it is envisaged that the doctors should receive a basic salary augmented by a productivity bonus. This productivity bonus would be based on increasing output per group member and could be done on an individual or group basis. This productivity bonus will encourage the

group to substitute para-medical personnel to the fullest extent possible.

There would be a need for the Defense Department to monitor the plans to guarantee that the productivity bonus incentive did not encourage the quality of service to decrease beyond proper bounds. As noted earlier, some decreases are desirable, e.g., decreased hospital utilization. If preferred, a straight fee-for-services system could serve in place of the salary plus bonus arrangement outlined above.

Monopolies tend to be insensitive to the needs of their customers. The Kaiser system has avoided this danger by insisting that all groups contracting for health services offer their employees at least one alternative health plan. This model should be followed by the Defense Department. The recipient population should be allowed the option of an alternative program. The most appropriate alternative that comes to mind are the two nationwide programs offered to federal employees under the Federal Employees Health Benefit Program. This option would also serve as a yardstick of medical group performance. If, in a particular locality, an increasing proportion of recipients were to opt out of the group program this would indicate a lack of responsiveness on the part of the group and might warrant some changes in the arrangements.

Another important yardstick would be the coexistence of health facilities manned exclusively by uniformed personnel. These two types of organization would serve as checks on each other and encourage greater efficiency throughout the system. Since they would be dealing with the same population in similar facilities, cost comparisons would be much more meaningful than the simple military sector vs. civilian sector comparisons that are made at present.

This study has focused almost exclusively on physicians, but civilianization is also recommended for the other medical services as well. These include dentists, nurses, medical administrators and various types of para-medical personnel. In the case of dental care, the military will be pioneers since prepaid dental care is not too prevalent in the civilian sector.

There is no reason why the capitation fee paid by the Defense Department to the medical groups or the incomes received by the physicians from the groups should be uniform throughout the system.[47] One advantage of decentralization by geographic area is the ability to vary payment by area. It may be necessary to pay doctors more in places where the cost of living is above average. It may be necessary to pay doctors more to agree to live in some remote rural areas. Such differences should be allowed to encourage medical manpower to move to areas where shortages might otherwise develop.

Uniformed Medical Corps

Under our proposal the uniformed Medical Corps would be greatly reduced in size. It could be composed primarily of people who prefer military life and who are not fazed by the non-pecuniary disadvantages of such a life. The primary need for the uniform corps will be at sea and in foreign countries where the level of medical care is below American standards. In other countries, such as Western Europe, civilian group practice should prove as feasible as it would in CONUS.

The figure of 4,000 billets mentioned earlier includes sufficient rotation billets for those who will be on short duty tours. These rotation billets in CONUS would be of two types. First there will be an expanded need for doctors to monitor the civilian groups. Secondly care would be taken to preserve an adequate number of health facility locations that will be staffed exclusively by uniformed personnel. These facilities should include some of the better duty posts, such as the Army's Class II hospitals and other teaching facilities. The uniformed corps must not be treated as second-class citizens. They should get a fair share of the educational and research funds and the other perquisites received by the civilian groups.

One way of encouraging entry into the uniformed corps might be an expanded program of aid to medical students. For example, a $5,000 annual stipend paid over the period of medical school, internship and residency could obligate students to a three-year tour of active duty. These fellowships should be augmented by increasing the special pay physicians receive.

It is anticipated that the uniformed medical corps will be an elite group of men, excellent doctors strongly motivated toward the military way of life.[48] They will be the sort of people who have chosen to remain in the medical corps today despite all the hardships. It is hoped that the pay increases, education assistance and other improvements will minimize the sacrifice they are required to make.

In summation the proposal outlined in this report would retain the present military health care system, but calls for increased civilian staffing of the system. Both the civilian and uniformed doctors would be fully dedicated and work exclusively for the needs of the armed forces. They will share the common goal of providing the best and most efficient health care to the 10 million persons in the Department of Defense recipient population. Both types of physicians would continue to be at the forefront of research and development of innovations in health care. The lessons learned from the successful implementation of this proposal should help to improve the quality of medical care in the civilian sector as well.

REFERENCES

[1] I wish to thank my colleagues at the Center for Naval Analyses and on the staff of the President's Commission for their advice and comments on the study. In particular I am greatly indebted to Mr. Robert Epley for his conscientious efforts to estimate the costs of health services and Dean William Meckling, Executive Director of the Commission for his incisive criticism. The Office of the Deputy Assistant Secretary of Defense for Health Affairs was extremely helpful in providing me with data and guidance. Needless to say, few, if any, of the above mentioned persons agree with all (or any) of my conclusions.

[2] Based on data prepared by the Office of Compensation and Career Development in DOD. The military income stream includes the recently enacted continuation pay and assumes a military internship and three year military residency. The period of military internship and residency weighs the stream in favor of the military since this is the only period when the military pays more than the market rate. For a physician entering the armed forces after a civilian internship and residency the ratio will be greater than 52 percent.

[3] If a volunteer medical service means one with higher retention rates, an assumption made by Dorsey and by the DASD - H&M, the budget would increase by much more than twice. On December 31, 1968 60 percent of the 15,972 doctors had served less than two years.

[4] A recent survey of 13 medical officer retention studies listed 13 non-pecuniary disincentives to continuing the military services. These studies were written in the period 1956-1968. Many of these disincentives would disappear if the provision of medical services were civilianized.

[5] Unless otherwise stated, all data in the section was provided by the Office of the Deputy Assistant Secretary of Defense for Health Affairs and refers to December 31, 1968.

[6] For a brief survey of the history of the military medical services see: W. D. Tribble, Doctor Draft Justified?, San Antonio, 1968, pp. 1-43.

[7] The CHAMPUS program is discussed in greater detail in a later section.

[8] Dorothy P. Rice and Barbara S. Cooper, "National Health Expenditures, 1929-68," Social Security Bulletin, January 1970, Table 7.

[9] Ibid. Table 9.

[10] The Berry Plan, discussed below, ...ts to remedy this.

[11] The ratio for the military population ...s underestimated since dependents and retired person... have the CHAMPUS option.

[12] Taken from p. 16 of "Health Manpower ... U.S. 1915-1967," National Center for Health Statistic..., November 1968. Their figure of 158 was reduced to a... ount for 14,198 inactive physicians.

[13] Ibid. p. 31.

[14] DOD data from "Selected Data Concerning Medical Care Provided at Fixed Military Medical Facilities." Civilian data from Hospitals Guide issue, August 1, 1969, Vol. 43, part 2, pp. 474-475.

[15] I am indebted to Dr. Walter Oi for this point.

[16] Table prepared by the Medical Statistics Agency, Office of the Army Surgeon General.

[17] The table was prepared by Mr. Robert Epley of the Cost Analysis Division of NAVWAG and is based on a DOD pamphlet Uniformed Services Health Benefits Program.

[18] CHAMPUS Phaseback Report.

[19] CHAMPUS data from Phaseback Report, Army hospital data computed from tables furnished by the Medical Statistics Agency of the Surgeon General.

[20] Data on FEHBP from Group Health and Welfare News Special Supplement, October 1968. Of course, the two populations are quite different. The DOD population excludes most prime age males and includes retired persons.

[21] Hospitals op. cit.

[22] I am indebted to Mrs. Linda Miller and Mrs. Karen Shipper for some of the calculations in this chapter.

[23] On June 30, 1967, 15.1 percent of Air Force personnel were officers. The comparable proportion for the Army was 9.9 percent. Selected Manpower Statistics, April 15, 1968.

[24] Data on accessions for October 1966-September 1968 indicate that 97 percent of Air Force estimates were high school graduates as compared to 72 percent for the Army. School grades completed were 11.8 for the Army and 12.5 for the Air Force. Project One Hundred Thousand, Office of the Assistant Secretary of Defense (Manpower and Reserve Officers), March 1969. For the effect of education on health see Michael Grossman, The Demand for

Health, unpublished Ph.D. dissertation, Columbia University, 1969.

25 Annual Chart Book op. cit.

26 See, for example, Report of the National Advisory Commission on Health Manpower, November 1967, Washington, G.P.O., Vol. II Appendix IV which argues that much of the increased efficiency of the Kaiser Foundation Medical Care Program is due to this type of substitution.

27 The best source of information concerning health care for this group is contained in Medical Care for Retired Military Personnel and Their Dependents. A Report to the Secretary of Defense by the Defense Study Group on Health Care for Retired Personnel and Their Dependents, OASD (Manpower) 1 June 1964.

28 Ibid. and the studies cited therein. I received a copy of Military Medicare by Frank Van Dyke of Columbia University's School of Public Health too late to incorporate its findings.

29 For discussion of Medicare and Medicaid see the Report of the Staff of the Finance Committee, U.S. Senate, February 1970 and the Hearings Before the Finance Committee February 25-26, 1970.

30 For recent discussion of the cost and quality of medical care in the private sector see: Fred Anderson, The Growing Pains of Medical Care, a three-part essay in The New Republic beginning January 17, 1970, and Fortune Magazine, January 1970, for an editorial and four articles on "Our Ailing Medical System."

31 A Report on the Health of the Nation's Health Care System, R. H. Finch, Secretary of Health, Education and Welfare, R. O. Egeberg, Assistant Secretary-Designate for Health and Scientific Affairs, July 10, 1969.

32 Report of the National Advisory Commission on Health Manpower, op. cit. Volume 1, p. 54.

33 See references in footnote 30.

34 HEW NEWS, press release, March 25, 1970.

35 See: Allied Health Personnel: A Report on Their Use in the Military Services as a Model for Use in Non-Military Health Care Programs, National Academy of Sciences, 1969, for an example of unempirical didacticism supporting the conventional wisdom.

36 See Report of the National Commission on Health Manpower, op. cit. Appendix VII entitled, "Legal Regulation of Health Personnel in the United States."

[37] Commander F. O. McClendon Jr., "Doctors and Dentists, Nurses and Corpsmen in Vietnam," Proceedings of the U.S. Naval Institute, Naval Review Issue May 1970, p. 278.

[38] The Report of the National Advisory Commission on Health Manpower, op. cit. Appendix IV, p. 207, states: "Neither did the study group find evidence of major innovations in the practice of medicine. Kaiser physicians use standard medical practices and procedures during their contacts with patients, and there does not appear to be an unusual substitution of auxiliary personnel for physicians." This is easily understood in the light of the point made in the text. The members of the Permanente Medical Group do not stand to gain by innovating in these areas. Any increase in efficiency would lead to a decrease in the capitation fee paid by the Kaiser Health Plan to the medical group rather than to an increase in income for the doctors.

[39] Lt. Col. Gilbert L. Jacox, "A Compendium of Studies on Career Retention," Review of the Health Benefits Program of the Armed Forces, Hearings before the House Committee on Armed Services, December, 1969.

[40] Avedis Donabedian, "An Evaluation of Prepaid Group Practice," Inquiry Vol. VI, Number 3, September 1969, pp. 3-27. See also the references in Section 4.

[41] Computed from "Selected Data Concerning Medical Care Provided in Fixed Military Medical Facilities" ODASD(HA). The data excludes beds occupied in Southeast Asia.

[42] This problem affects other health personnel in addition to doctors. The Navy Nurse Corps, for example, allows its officers to marry, but does not allow them to have children. This too serves to discourage many nurses from choosing a military career.

[43] See Louis Reed's pioneering work Studies of Incomes of Physicians and Dentists, U.S. Department of Health, Education and Welfare, Social Security Administration, Office of Research and Statistics, December 1968, Table B-7. Some of the difference in income may be explained by the difference in average hours worked. Male physicians worked 12.5 hours a week more than female physicians.

[44] Ibid. Table B-4. This difference also affects the income differential since self-employed physicians earn more than those on a salaried basis.

[45] In the Northern California Permanente Medical Group withdrawals after the probationary period are .6 percent annually. See Report of the Health Manpower Commission, op. cit. Vol. II, p. 200.

[46] Donabedian op. cit. and the references cited therein.

[47] I believe such differences exist between the four Kaiser regions.

[48] The use of the term "uniformed corps" should not be interpreted as implying an end to the current system wherein each service has its own medical corps. The proposed approach can coexist with the current system or with a unified medical corps. The proposal of a unified medical corps has met strong opposition in the past. This study has not investigated this question. Of course, the civilianized portion of the health system will not retain any service differentiation.

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